

Application Serial No. 10/612,664
Amendment dated February 24, 2005
Response to Office Action mailed November 24, 2004

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (currently amended) An apparatus for accepting a removable media member, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the apparatus comprising:

a first member;

a second member;

the first member and the second member being adapted to move away from each other along an axis to provide a space for receiving the removable media member, and toward each other along an axis to secure the removable media member; and

the first member having a first cleat with a first leg and a second leg, the first leg of the first cleat extending away from the first member and toward the second member, the second leg of the first cleat extending in a lateral direction relative to the first leg, the first leg and the second leg forming a channel for receiving the removable media member such that the first leg engages one or more of the lateral sides of the removable media member and the second leg engages at least a portion of the front or the back side of the removable media member.

2. (original) An apparatus according to claim 1 wherein the first leg is positioned so that when the removable media member is received by the first member and the second member, the removable media member is at least roughly aligned with a desired position relative to the first member and/or second member.

3. (original) An apparatus according to claim 2 wherein the second member includes one or more alignment pins, and the removable media member includes one or more receiving holes for receiving the one or more alignment pins.

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4. (original) An apparatus according to claim 3 wherein the first leg is positioned so that when the removable media member is received by the first member and the second member, the one or more receiving holes in the removable media member are at least roughly aligned with the one or more alignment pins of the second member.

5. (original) An apparatus according to claim 4 wherein the second leg of the first cleat is adapted to engage the removable media member and pull the removable media from the one or more alignment pins of the second member when the first member and the second member are moved away from each other.

6. (original) An apparatus according to claim 5 wherein the first member further includes a second cleat spaced from the first cleat, the second cleat including a first leg and a second leg, wherein the first leg extends away from the first member and toward the second member, and the second leg extends in a lateral direction relative to the first leg toward the first cleat, the first leg and the second leg of the second cleat forming a channel for receiving the removable media member such that the first leg of the second cleat is positioned adjacent one or more of the lateral sides of the removable media member and the second leg of the second cleat engages at least a portion of one of the front or the back side of the removable media member.

7. (original) An apparatus according to claim 6 wherein the first leg of the first cleat is positioned adjacent one of the lateral sides of the removable media member and the first leg of the second cleat is positioned adjacent an opposing one of the lateral sides of the removable media member.

8. (original) An apparatus according to claim 7 wherein the second leg of the first cleat and the second leg of the second cleat both engage the front side of the removable media member.

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9. (original) An apparatus according to claim 8 wherein the removable media member is a fluidic cartridge.
10. (original) An apparatus according to claim 3 wherein at least one of the alignment pins is a stop pin, the stop pin being adapted to engage at least one of the lateral sides of the removable media member when the removable media member is fully inserted between the first member and the second member.
11. (original) An apparatus according to claim 1 wherein the second member is fixed, and the first member is movable toward the second member.
12. (original) An apparatus for accepting a removable media member having one or more electrical contacts, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the apparatus comprising:
- a first member;
 - a second member;
 - the first member and the second member being adapted to move away from each other to provide a space for receiving the removable media member, and toward each other to secure the removable media member; and
 - the first member having one or more spring biased probes extending outward toward the second member, the one or more spring biased probes being positioned to align with at least selected ones of the one or more electrical contacts of the removable media member when the removable media member is at a desired position between the first member and the second member.
13. (original) An apparatus according to claim 12 wherein at least one of the first member and second member includes one or more alignment pins, and the removable media member includes one or more receiving holes for receiving the one or

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more alignment pins when the removable media member is at the desired position between the first member and the second member.

14. (currently amended) An apparatus according to claim 12 wherein the first member further includes outward bias means for providing a bias force to the removable media member, the bias force being directed away from the first member.

15. (currently amended) An apparatus according to claim 14 wherein the bias force of the outward bias means is overcome when the first member and the second member are moved toward each other to secure the removable media member.

16. (currently amended) An apparatus according to claim 15 wherein the bias force of the outward bias means pushes the removable media member away from the one or more spring biased probes when the first member and the second member are moved away from each other.

17. (original) An apparatus according to claim 14 wherein the outward bias means includes a spring.

18. (original) An apparatus according to claim 17 wherein the outward bias means includes a wedge that is biased to an outward position away from the first member by the spring.

19. (original) An apparatus according to claim 12 wherein the removable media member is a fluidic cartridge.

20. (original) An apparatus according to claim 19 wherein the removable media member includes:

one or more flow channels; and

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one or more flow sensors in fluid communication with selected ones of the one or more of the flow channels, the one or more flow sensors being electrically connected to selected ones of the one or more electrical contacts.

21. (original) An apparatus according to claim 19 wherein the removable media member includes one or more pumps, wherein the one or more pumps are electrically connected to selected ones of the one or more electrical contacts.

22. (original) An apparatus comprising:
a removable media member including one or more sensors and/or actuatable devices, the removable media member further including communication means wherein at least one of the one or more sensors and/or actuatable devices is in communication with the communication means of the removable media member; and
a base adapted to receive the removable media member, the base including communication means that is adapted to communicate with the communication means of the removable media member.

23. (original) An apparatus according to claim 22 wherein the removable media member includes one or more detectors and the base includes one or more emitters.

24. (original) An apparatus according to claim 23 wherein the one or more detectors of the removable media member include one or more optical detectors, and the one or more emitters of the base includes one or more optical emitters.

25. (original) An apparatus according to claim 23 wherein the one or more detectors of the removable media member include one or more RF detectors, and the one or more emitters of the base includes one or more RF emitters.

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26. (original) An apparatus according to claim 22 wherein the removable media member includes one or more emitters and the base includes one or more detectors.

27. (original) An apparatus according to claim 26 wherein the one or more emitters of the removable media member include one or more optical emitters, and the one or more detectors of the base includes one or more optical detectors.

28. (original) An apparatus according to claim 27 wherein the one or more emitters of the removable media member include one or more RF emitters, and the one or more detectors of the base includes one or more RF detectors.

29. (original) An apparatus for accepting a removable media member that has one or more fluid ports, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the apparatus comprising:

a first member;

a second member;

the first member and the second member being adapted to move away from each other to provide a space for receiving the removable media member, and toward each other to secure the removable media member; and

the first member having one or more fluid ports, the one or more fluid ports being positioned to align with at least selected ones of the fluid ports of the removable media member when the removable media member is secured by the first member and the second member.

30. (original) An apparatus according to claim 29 wherein one or both of the first member and the second member include one or more alignment pins, and the removable media member includes one or more holes for accepting the one or more alignment pins.

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31. (original) An apparatus according to claim 29 wherein a seal is formed between the one or more fluid ports of the first member and the one or more fluid ports of the removable media member when the first member and the second member are moved toward each other to secure the removable media member.

32. (original) An apparatus according to claim 29 further including means for moving the removable media member away from the one or more fluid ports of the first member when the first member and the second member are moved away from each other.

33. (original) An apparatus according to claim 29 wherein the one or more fluid ports of the first member and the one or more fluid ports of the removable media member are adapted to transport a gas.

34. (original) An apparatus according to claim 29 wherein the one or more fluid ports of the first member and the one or more fluid ports of the removable media member are adapted to transport a liquid.

35. (original) An apparatus according to claim 29 wherein the removable media member is a fluidic cartridge.

36. (original) An apparatus for accepting a removable media member that has one or more electrical contacts and one or more fluid ports, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the apparatus comprising:

a first member;

a second member;

the first member and the second member being adapted to move away from each other to provide a space for receiving the removable media member, and toward each other to secure the removable media member; and

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at least one of the first member and/or second member having one or more spring biased probe, the one or more spring biased probe being positioned to align with at least selected ones of the one or more electrical contacts on the removable media member when the removable media member is received by the first member and the second member; and

at least one of the first member and/or second member having one or more fluid ports, the one or more fluid ports being positioned to align with at least selected ones of the fluid ports of the removable media member when the removable media member is received by the first member and the second member.

37. (currently amended) An apparatus according to claim 36 wherein at least one of the first member and/or second member further includes outward bias means for providing a bias force to the removable media member away from the one or more spring biased probes.

38. (original) An apparatus according to claim 36 wherein a seal is formed between the one or more fluid ports of the at least one of the first member and/or second member and the one or more fluid ports of the removable media member when the first member and the second member are moved toward each other to secure the removable media member.

39. (original) An apparatus for accepting a removable media member, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the apparatus comprising:

a first member;

a second member;

the first member and the second member being adapted to move away from each other to provide a space for receiving the removable media member, and toward each other to secure the removable media member; and

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the first member having a groove therein, the groove extending along a groove path that corresponds to the perimeter of the front side of the removable media member when the removable media member is at a desired position relative to the first member and the second member.

40. (original) An apparatus according to claim 39 wherein the removable media member includes a number of imperfections around the perimeter of the front side of the removable media member, and the groove provides relief space for the number of imperfections.

41. (original) An apparatus according to claim 39 wherein the removable media member is a fluidic cartridge.

42. (currently amended) A method for accepting a removable media member, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the method comprising the steps of:

- providing a first member;
- providing a second member;
- moving the first member and the second member away from each other along an axis to provide a space therebetween;
- inserting the removable media member into the space between the first member and the second member;
- moving the first member and the second member toward each other along an axis to secure the removable media member;
- moving the first member and the second member away from each other along an axis; and
- moving the removable media member with the first member when the first member and the second member are moved away from each other.

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43. (original) A method according to claim 42 wherein the second member includes one or more alignment pins, and the removable media member includes one or more receiving holes for receiving the one or more alignment pins, the one or more receiving holes of the removable media member receiving the one or more alignment pins when the first member and the second member are moved toward each other to secure the removable media member.

44. (original) A method according to claim 43 wherein the one or more alignment pins are removed from the one or more holes of the removable media member when the removable media member is moved with the first member when the first member and the second member are moved away from each other.

45. (original) A method according to claim 43 wherein the removable media member is a fluidic cartridge.

46. (original) A method for accepting a removable media member, having one or more electrical contacts, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the method comprising the steps of:

providing a first member and a second member, the first member having one or more spring biased probes extending outward toward the second member, the one or more spring biased probes being positioned to align with at least selected ones of the one or more electrical contacts of the removable media member when the removable media member is received by the first member and the second member.

moving the first member and the second member away from each other to provide a space therebetween;

inserting the removable media member into the space between the first member and the second member; and

moving the first member and the second member toward each other to receive the removable media member such that at least selected ones of the one or more spring

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biased probes make electrical contact with one or more of the electrical contacts of the removable media member.

47. (original) A method according to claim 46 further comprising the steps of moving the first member and the second member away from each other; and moving the removable media member away from the first member when the first member and the second member are moved away from each other.

48. (original) A method according to claim 46 wherein the removable media member is a fluidic cartridge.

49. (original) A method according to claim 48 wherein the removable media member includes:

one or more flow channels; and
one or more flow sensors in fluid communication with selected ones of the one or more of the flow channels, the one or more flow sensors being electrically connected to selected ones of the one or more electrical contacts.

50. (original) A method according to claim 46 wherein the removable media member includes one or more detectors, wherein the one or more detectors are electrically connected to selected ones of the one or more electrical contacts.

51. (original) A method according to claim 50 wherein the one or more detectors include one or more optical detectors.

52. (original) A method according to claim 46 wherein the removable media member includes one or more optical emitters, wherein the one or more optical emitters are electrically connected to selected ones of the one or more electrical contacts.

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53. (original) A method according to claim 46 wherein the removable media member includes one or more pumps, wherein the one or more pumps are electrically connected to selected ones of the one or more electrical contacts.

54. (original) An apparatus comprising:
a removable media member including one or more pneumatically responsive elements; and
a base adapted to receive the removable media member, the base including one or more pneumatic sources,
wherein when the removable media member is received by the base, at least one of the pneumatic sources of the base are in fluid communication with at least one of the pneumatically responsive elements of the removable media member.

55. (original) An apparatus according to claim 54 wherein the one or more pneumatically responsive elements includes a pneumatically actuated valve.

56. (original) An apparatus according to claim 54 wherein the one or more pneumatically responsive elements includes an element that produces pneumatically controlled mechanical movement.

57. (original) An apparatus according to claim 56 wherein the element that produces pneumatically controlled mechanical movement is a pneumatically controlled pump.

58. (currently amended) An apparatus for accepting a removable media member, the removable media member having an interface that is adapted to interfacing interface with a corresponding interface of the apparatus, the apparatus comprising:
a receiver slot for receiving the removable media member, the interface of the apparatus being positioned to align with the interface of the removable media member

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when the removable media member is inserted to a predetermined position in the receiver slot; and

bias means extending into the receiver slot for biasing the interface of the removable media member away from the interface of the apparatus when the removable media member is being inserted into the receiver slot.

59. (previously presented) The apparatus of claim 58 further comprising:
a movable member that is selectively moveable in a first direction to push the removable media member, working against the bias means, until the interface of the removable media member engages the interface of the apparatus after the removable media member is inserted to the predetermined position in the receiver slot.

60. (previously presented) The apparatus of claim 59 wherein the movable member is selectively moveable in a second direction, which allows the biasing means to help move the interface of the removable media member away from the interface of the apparatus.

61. (previously presented) The apparatus of claim 58 wherein the receiver slot is at least partially defined by one or more L-shaped cleats.

62. (previously presented) The apparatus of claim 58 wherein the interface of the removable member includes a number of contacts.

63. (previously presented) The apparatus of claim 64 wherein the interface of the apparatus includes a number of contacts.

64. (previously presented) The apparatus of claim 63 wherein the number of contacts of the interface of the apparatus include a number of spring bias probes.

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65. (previously presented) The apparatus of claim 58 wherein the bias means includes a spring.

66. (previously presented) The apparatus of claim 65 wherein the bias means includes a wedge biased by the spring, wherein the wedge is biased into the receiver slot for biasing the interface of the removable media member away from the interface of the apparatus when the removable media member is inserted into the receiver slot.

67. (previously presented) The apparatus of claim 66 wherein the wedge has a chamfer that helps provide easier insertion of the removable media member into the receiver slot.

68. (previously presented) A method for loading and unloading a removable media member having one or more electrical contacts, the removable media member having a front side, a back side, and one or more lateral sides extending between the front side and the back side, the method comprising the steps of:

providing a body including a first member and a second member, wherein the body has one or more contacts that align with the one or more electrical contacts of the removable media member when the removable media member is inserted at a predetermined position between the first member and the second member;

biasing the removable media member away from the first member such that the one or more contacts of the body do not engage the one or more electrical contacts of the removable media member;

moving the first member and the second member toward each other, overcoming the bias, such that at least selected ones of the one or more contacts of the body engage and make electrical contact with one or more contacts of the removable media member; and

moving the first member and the second member away from each other, the biasing step helping to push the removable media member away from the first member,

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thereby breaking the electrical contact between the one or more contacts of the removable media member and the one or more contacts of the body.

69. (previously presented) The method of claim 68 wherein the bias step is performed using a spring.

70. (previously presented) The method of claim 69 wherein the biasing step is performed using a wedge that is biased with the spring.

71. (previously presented) The method of claim 70 wherein the wedge has a chamfer.